



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,027	07/25/2006	Ivan Poupyrev	285120US6X PCT	9459

22850 7590 08/24/2009
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

HICKS, CHARLES V

ART UNIT	PAPER NUMBER
----------	--------------

2629

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

08/24/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/567,027	POUPYREV ET AL.	
	Examiner	Art Unit	
	CHARLES HICKS	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/03/2006; 10/15/2007; 02/28/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jasso et al. (US 2004/0012560) in view of Face (US 5,781,646).

In reference to claim 1, Jasso teaches a tactile feedback apparatus
(Jasso, pg. 1, par. 16),

Art Unit: 2629

comprising an interfacing element acted on by a user (Jasso, Fig. 2, switch 2; pg. 1, par. 16);

a piezo actuator arranged on said interfacing element for presenting tactile feedback to a user acting on said interfacing element (Jasso, Fig. 1, actuator 6; pg. 2, par. 28);

and a controller for driving controlling said piezo actuator, by a signal (Jasso, Fig. 1, processor/controller 9; pg. 3, par. 35).

Jasso however fails to teach said piezo actuator being of a circular-shaped multi-layered structure and having a shape changed to an upturned dome shape or to a downturned dome shape on application of voltages of opposite polarities to a plurality of layers in an upper portion of said multi-layered structure and to a plurality of layers in a lower portion of said multi-layered structure; a controller controlling the change between the upturned dome shape and the downturned dome shape.

Face discloses a piezoelectric actuator, analogous in art with that of Jasso, wherein said piezo actuator being of a circular-shaped multi-layered structure and having a shape changed to an upturned dome shape or to a downturned dome shape on application of voltages of opposite polarities to a plurality of layers in an upper portion of said multi-layered structure and to a plurality of layers in a lower portion of said multi-layered structure (Face, col. 7, ll. 14-17);

and a controller controlling the change between the upturned dome shape and the downturned dome shape (Face, col. 1, ll. 11-16).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the piezoelectric actuator of Jasso such that said piezo actuator being of a circular-shaped multi-layered structure and having a shape changed to an upturned dome shape or to a downturned dome shape on application of voltages of opposite polarities to a plurality of layers in an upper portion of said multi-layered structure and to a plurality of layers in a lower portion of said multi-layered structure; the controller of Jasso controlling the change between the upturned dome shape and the downturned dome shape, as taught by Face.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to provide high deformation piezoelectric curves or bows within a three-dimensional dome shape (Face, col. 7, ll. 14-17).

Claim 2 is rejected as being dependent on rejected claim 1 as discussed above and further, Jasso modified by Face teaches wherein at least one of the amplitude and the frequency in a change between said upturned dome shape and the downturned dome shape is determined depending on an inputting operation by a user mediated by said interfacing element (Jasso, pg. 2, par. 27).

Art Unit: 2629

Claim 3 is rejected as being dependent on rejected claim 1 as discussed above and further, Jasso modified by Face teaches further comprising a force sensor for detecting the force applied at the time of the operation for inputting by a user (Jasso, pg. 3, par. 35);

wherein at least one of the amplitude and the frequency in a change between said upturned dome shape and the downturned dome shape (Jasso, pg. 2, par. 27),

is determined depending on the force as detected by said force sensor (Jasso, pg. 3, par. 37).

Claim 4 is rejected as being dependent on rejected claim 1 as discussed above and further, Jasso modified by Face teaches wherein said interfacing element is a joystick operating device, a button device or a switch device (Jasso, pg. 1, par. 17-18).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jasso et al. (US 2004/0012560) in view of Face (US 5,781,646), and further in view of Rosenberg et al. (US 6,147,674).

In reference to claim 5, Jasso teaches an interfacing element acted on by a user (Jasso, Fig. 2, switch 2; pg. 1, par. 16);

Art Unit: 2629

a piezo actuator arranged on said interfacing element for presenting tactile feedback to a user acting on said interfacing element (Jasso, Fig. 1, actuator 6; pg. 2, par. 28);

and a controller for driving controlling said piezo actuator by a signal (Jasso, Fig. 1, processor/controller 9; pg. 3, par. 35).

Jasso however fails to teach said piezo actuator being of a circular-shaped multi-layered structure and having a shape changed to an upturned dome shape or to a downturned dome shape on application of voltages of opposite polarities to a plurality of layers in an upper portion of said multi-layered structure and to a plurality of layers in a lower portion of said multi-layered structure; a controller controlling the change between the upturned dome shape and the downturned dome shape.

Face discloses a piezoelectric actuator, analogous in art with that of Jasso, wherein said piezo actuator being of a circular-shaped multi-layered structure and having a shape changed to an upturned dome shape or to a downturned dome shape on application of voltages of opposite polarities to a plurality of layers in an upper portion of said multi-layered structure and to a plurality of layers in a lower portion of said multi-layered structure (Face, col. 7, ll. 14-17);

and a controller controlling the change between the upturned dome shape and the downturned dome shape (Face, col. 1, ll. 11-16).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the piezoelectric actuator of Jasso such that said piezo actuator being of a circular-shaped multi-layered structure and having a shape changed to an upturned dome shape or to a downturned dome shape on application of voltages of opposite polarities to a plurality of layers in an upper portion of said multi-layered structure and to a plurality of layers in a lower portion of said multi-layered structure; the controller of Jasso controlling the change between the upturned dome shape and the downturned dome shape, as taught by Face.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to provide high deformation piezoelectric curves or bows within a three-dimensional dome shape (Face, col. 7, ll. 14-17).

Jasso modified by Face however fails to teach a system comprising a main body part executing an application program and a user interface program and a control device mounted in separation from said main body part and adapted for controlling the state of said application program; and control by a controller being managed in keeping with the current state of said application program and the interface program.

Rosenberg discloses a force feedback interface, analogous in art with that of Jasso modified by Face, in a system comprising a main body part executing an application program and a user interface program and a control device

Art Unit: 2629

including an interfacing element acted on by a user mounted in separation from said main body part and adapted for controlling the state of said application program (Rosenberg, Fig. 1; col. 2, ll. 10-27);

and control of the dome shape by a controller being managed in keeping with the current state of said application program and the interface program (Rosenberg, Fig. 1; col. 2, ll. 10-27).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the force feedback interface of Jasso modified by Face such that it was incorporated in a system comprising a main body part executing an application program and a user interface program and a control device mounted in separation from said main body part and adapted for controlling the state of said application program; and such that control of the dome shape by the controller of Face is managed in keeping with the current state of said application program and the interface program, as taught by Rosenberg.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been a common use for force feedback interface devices such as joysticks in video game applications (Rosenberg, col. 2, ll. 10-27).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES HICKS whose telephone number is 571-270-7535. The examiner can normally be reached on Monday-Thursday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz, can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/Alexander Eisen/

Supervisory Patent Examiner AU2629